Remarks

I. Status of Claims

Claims 15-16 and 18-27 are pending in the application. Claim 15 is the only independent claim and currently amended. Claims 1-14 and 17 were previously canceled. The Applicant believes that no new matter is added.

Claim 15 and 22 – 26 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US 4,741,978 (hereinafter "Takabayashi") in view of Takatoshi et al (EP 1 235 340) (hereinafter "Takatoshi") and in view of US 4,968,338 (hereinafter "Sugiyama").

Claims 15-16, 18, 20-21 and 26-27 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over US Published Patent Application 2002/0094467 (hereinafter "Nonobe") in view of Takatoshi and Sugiyama.

Claims 19, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nonobe in view of Takatoshi in view of Sugiyama, as applied to claims 15 and 18 above, and in further view of Ferguson et al. (USP 6,463,949) (hereinafter "Ferguson").

Claim 19 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nonobe in view of Takatoshi in view of Sugiyama in view of Ferguson as applied to claims 15, 18, 20 and 21 above, and in further view of Sugawara et al. (USP 7,279,242 B2) (hereinafter "Sugawara").

Claims 15-16 and 18-27 also stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

This Response amends claims 15 and 23. Support for adding "currents" to claim 15 may be found, *inter alia*, in paragraph [0024] of the published Application (U.S. Patent Publication No. 2006/0153687). The other amendments to claim 15 are made to obviate the 35 U.S.C. § 112 rejection. Claim 23 is amended because "an abnormality detecting portion" has been recited in claim 15. The Applicant believes that no new matter is introduced by the amendments.

The Applicant respectfully requests reconsideration of these rejections in view of the foregoing amendments and the following remarks.

II. Applicant's Statement of Substance of Examiner Interview

In compliance with M.P.E.P. 713.04, the Applicant provides this Statement of Substance of Interview concerning the interview conducted on September 29, 2009 with Examiners Bobish and Kramer, and the Applicant's representative Xiaomin Huang.

(A) Exhibits. N/A.

(B) Claim(s). 15.

(C) References Discussed. Takabayahsi, Takatoshi and Sugiyama.

(D) Amendments. N/A

(E) Principal arguments of Applicant. The Applicant argued that Takabayahsi did not disclose or suggest "a plurality of types of different abnormalities related to driving the motor" as recited in claim 15.

(F) Other matters. None.

(G) Results. The Examiner indicated that the Applicant's arguments were not persuasive.

III. 112, Second Paragraph Rejections

Claims 15-16 and 18-27 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, the Office Action indicates that the use of the language "predetermined number of times" in claim 15 is unclear and indefinite. Claim 15 is amended to clarify the claim language.

Further, claim 15 is amended to delete the language reciting "that detects at least a rotational position of the motor." This adjective clause was originally for describing a preceding noun "sensor" of "having no sensor," but that limitation has been deleted in a previous Response. Since this claim language may lead to a misinterpretation that the sensorless motor detects at least a rotational position of the motor, which is contrary to our disclosure, this Response deletes this phrase.

IV. Pending Claims

Independent claim 15, the only independent claim, stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Takabayahsi in view of Takatoshi and further in

view of Sugiyama. Also, claims 15 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nonobe in view of Takatoshi and further in view of Sugiyama.

The Applicant respectfully submits that claim 15 is patentable over the cited references at least because it recites, *inter alia*, "…an abnormality detecting portion which detects ***a plurality of types of different abnormalities related to currents driving the motor***," and "…***an abnormality determining portion*** which ***counts the number of the detected abnormalities, regardless of type***, compares the number of the detected abnormalities with a predetermined number, and determines that an abnormality has occurred in the supply system when the number of the detected abnormalities reaches the predetermined number after an instruction has been given to start the motor until a predetermined period of time has passed." Emphasis added.

Certain embodiments of the present invention, for example, the invention of claim 15, utilize an abnormality detecting portion to detect a plurality of types of different abnormalities related to currents driving the motor (e.g., overcurrent abnormality, lock abnormality, IPM abnormality) and an abnormality determining portion to count the number of abnormalities regardless of type that have occurred in the supply system in a predetermined time period, then compare the number of abnormalities with a predetermined number, which is set. Utilizing this an abnormality detecting portion and abnormality determining portion, it is possible to determine whether the abnormality is in the motor or in the supply system, and to check for an abnormality quickly at system startup. Thus, erroneous determinations can be minimized. *See* paragraphs [0006], [0011] and [0024] of the published Application.

The Office Action alleges Takabayashi's reference numerals 24, 25 and 26 of FIG. 1 discloses an abnormality detecting portion that detects a plurality of types of different abnormalities related to driving the motor. However, Takabayashi's detection section 24 only detects abnormal conditions such as "abnormal temperature rise in the fuel cell body 1, or an abnormal temperature rise in essential components of the fuel supply section 14." Takabayashi does not teach or suggest the detection section 24 detects any abnormalities ***related to currents driving the motor***. *See,* Takabayashi, col. 3, ll. 32-35. Further, although, the reference numerals 25 and 26 detect overcurrents in the motors 12 and 8 respectively, they detect the same type of

abnormalities related to currents driving two motors but not ***a plurality of types of different abnormalities related to currents driving the motor*** (a single motor) as required by the invention of claim 15.

With regard to Nonobe, the Office Action, on page 6, alleges that Nonobe's paragraphs 72-73 and 81 teach such a detecting portion. However, Nonobe only mentions that if any abnormality arises in the fuel cell system, the pressure of the hydrogen gas supplied increases to an excessively high level. *See,* paragraph 72 of Nonobe. It is respectfully submitted that the portions (i.e., paragraphs 72-73 or 81) of Nonobe relied upon in the Office Action do not teach or even remotely suggest the abnormality determining portion recited.

The Takatoshi and Sugiyama references do not cure the deficiencies of either Takabayashi or Nonobe. Takatoshi only mentions a sensorless motor. Sugiyama mentions detection of only one type of abnormality related to currents driving a motor – overcurrent. Thus, neither Takatoshi nor Sugiyama teaches or suggests ***a plurality of types of different abnormalities related to currents driving the motor*** as required by claim 15.

Moreover, in the cited portion, col. 5, line 26 – col. 6, line 5, Sugiyama counts only overcurrent. Sugiyama does not teach or suggest a ***an abnormality determining portion*** that ***counts the number of the detected abnormalities, regardless of type*** as required by claim 15.

Accordingly, neither the combination of Takabayashi, Takatoshi and Sugiyama nor the combination of Nonobe, Takatoshi and Sugiyama teaches or suggests each and every limitation of claim 15. Ferguson only discloses an ordinary pump (col. 2, line 39) and a construction that when the valve is deemed to be malfunctioning, the operation of the machine is stopped (col. 5, ll. 21-23). Ferguson does not cure the critical deficiencies of the above discussed references.

Therefore, for at least these reasons, claim 15 and its dependent claims are patentable over the cited references.

V. Conclusion

In light of the above discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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